

# Nutritional, Physicochemical and Sensory Properties of *Embul* Banana (*Musa acuminata* AAB) Snack Developed using Vacuum Dehydration

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A great potential exists for *Embul* Banana (*Musa acuminata* AAB) value added products due to its limited preservation methods and proven health benefits. This study focused on development of *Embul* banana snacks using vacuum dehydration. Vacuum dehydrated *Embul* banana snacks were packed using 300  $\mu$  High Density Polypropylene bags and stored in a cool and dry place for two months. Proximate composition of the final product was determined using AOAC methods. As microbiological properties total plate count, yeast and mold count and *Escherichia coli* were checked during the storage. Sensory data obtained monthly by 9-point hedonic scale were analyzed using Kruskal Wallis non parametric test in MINITAB 16. Developed snack sample contained  $0.87\pm 0.005\%$  moisture,  $5.2\pm 0.01\%$  crude fiber,  $0.3\pm 0.01\%$  free fat,  $15.4\pm 0.01\%$  protein, and  $3.2\pm 0.01\%$  ash. Sensory evaluation revealed that there were no significant changes ( $P > 0.05$ ) in any sensory attribute (color, aroma, taste, mouth feel, texture and overall acceptability) throughout the storage period. Physicochemical properties such as pH, firmness, total soluble solids, moisture% and ascorbic acid content of the final product were  $5.12\pm 0.005$ ,  $4.26\pm 0.50$  Kg,  $6.0\pm 0.0\%$ ,  $0.87\pm 0.005\%$  and  $10.79\pm 0.005$  mg  $100g^{-1}$ , respectively. Total phenolic content determined by Folin-Ciocalteu method for the final product was  $281.86\pm 1.18$  mg GAE  $100g^{-1}$  while  $IC_{50}$  value determined from the DPPH radical scavenging assay for the final product was  $234.06\pm 1.03$  mg  $mL^{-1}$ . Total plate count was less than  $10^1$  CFU  $g^{-1}$  while yeast and mold counts were less than  $10^3$  CFU  $g^{-1}$  which ensures that the product is within the international limits stipulated by World Health Organization. *E. coli* were not detected even after two months. Developed vacuum dehydrated *Embul* banana snacks can be safely stored under room temperature for two months.

**Keywords:** Banana snacks, Proximate analysis, Sensory evaluation, Shelf life, Vacuum dehydration